SECTION 16737

COMMUNICATION SERVICE BOX

1. Description. Construct, furnish and install communication service boxes complete with lids and aprons.

This specification describes the requirements for a standard, off-street, buried communication service box to be utilized to support communications cable installations.

2. Materials.

A. General Requirements.

- Ensure the communication service box is capable of supporting burial in off-street areas where occasional, non-deliberate heavy vehicle loads may be experienced.
- Sustaining light vehicle loads in applications such as parking lots or driveways, and does not deteriorate when buried in various types of soils with varying moisture content.

B. Functional Requirements.

Ensure that the communication service box is capable of the following applications:

- Pulling of fiber optic cable interconnected with conduit.
- Provide storage of cable service loops within minimum bend radius limits of 10 inches (250mm).
- Provide storage of splice enclosures.
- Provide attachment bracket kit for splice enclosure mounting to prevent splice enclosure from lying on the bottom of the communication service box.
- Provide access to cable and equipment after installation to support maintenance.
- Accommodate a degree of security of cable and equipment from vandalism and theft by requiring an access tool.
- Provide modular additions of conduits through punchouts or other means from four sides.
- Provide protection of cable and devices from run-over by light vehicles and non-deliberate heavy vehicles without damage to the communication service

box or enclosed cables and devices.

- Support National Electrical Code requirements for grounding of shielded metallic strength cables as deemed necessary by the communications installation design.
- Support water drainage of any invasive water.

C. Specifications. Communication service box material will comply with ASTM standards. The following applicable ASTM specifications are defined below:

Specification/ Test Method	Title/Subject	Applicability
ASTM C-497	Load testing of Pipe and Conduit	Compliant
ASTM C-857	Load Testing for Highways and Bridges	Compliant
ASTM D-543, Section 7	Chemical Resistance Test	Compliant
ASTM D-570, Section 5.0, 6.1, 6.5	Water Absorption	Compliant
ASTM D-635	Flammability Test	Compliant
ASTM D-790	Flexural Property	Compliant
ASTM D-2444	Impact Resistance Test	Compliant
ASTM E-84	Surface Burning Characteristics	Compliant
ASTM E-662	Specific Optical Density	Material Samples tested for Compliance
ASTM G-21	Fungus Growth	Material Samples tested for Compliance
ASTM G-155	Sunlight Exposure of Non-Metallic Materials	Compliant
ASTM G-154	Sunlight Exposure	Material Samples tested for Compliance

D. Environmental Requirements.

(1). Galvanic Corrosion. Ensure communication service box material does not contain dissimilar metals which support galvanic corrosion nor any chemicals which, when in contact with non-corrosive metals used in the splice enclosure construction would cause metal deterioration.

(2). Ice and Snow. Ensure communication service box will not be damaged by ice covering the lid at a thickness of two inches (50mm) nor a snow load of four feet (1.2m) for a period of four weeks.

3. Construction. Install communication service boxes in accordance with the following requirements:

   A. Requirements. Construct for in-ground installation ensuring a flush fitting with sidewalks and grass areas, using light weight, high strength materials.

      (1). Lid Requirements. Ensure lid is exposed to the environment and in public view.

         a. Include locking devices which are non-corrosive and require removal using a special access tool/key.

         b. Include provisions for lifting and removal using a maintenance tool.

         c. Traffic-bearing.

         d. Blend into the environment, providing an acceptable appearance.

         e. Perform its intended function without failure for a minimum of 20 years of exposure to the environment as defined in this specification.

      (2). General Requirements. Communications service box dimensions will be per plan drawings.

         a. Knockouts. Locate and configured as shown on plan drawings.

            - Provide four (4) conduit knockouts of minimum 2-inch (50mm) size on each wide dimension side of the communication service box close to the bottom edge, allowing adequate material for structural integrity.

            - Provide three (3) knockouts of 2-inch (50mm) minimum on the shorter dimension side of the communication service box for conduit penetrations.

         b. Drainage. Construct communication service box without a bottom, allowing drainage via a bottom trench fill of 8 inches (40mm) of gravel or crushed rock.

         c. Splice Enclosures and Mounting Kit. Include a kit for providing mounting for a splice enclosure per plan drawing.

            - Design with sidewall mounting provisions on the longest width for a splice enclosure.

            - Include brackets allowing attachment of a cylindrical splice enclosure using nylon ties in the splice enclosure mounting kit.

- Include in mounting provisions preformed holes for screw seat inserts with inserts included as part of the mounting kit, or screw seats molded into the communication service box sidewall.
- Support of 18 pounds is required for splice enclosure brackets.

(3). Safety Requirements.

a. Human Safety.

- Ensure communication service box is free from chemicals that are harmful to humans and is not constructed with sharp edges.
- Lid will have a minimum coefficient of friction of 0.5. The lid will not be constructed to cause slippage of a person walking across the covered communication service box during wet conditions.
- Lid installation and removal tools will comply with normally recognized industry safety standards.

b. System Safety. Communication service box material will contain no chemicals that may damage normal communications wire line, optical cable, splice enclosures or other equipment normally used in outdoor communications network installation. Also, communication service box will not reflect any light.

4. Measurement. This Item will be measured by each communication service box complete in place.

5. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Communication Service Boxes" of the types and sizes specified. This price is full compensation for excavating and backfilling; constructing, furnishing, and installing the communication service boxes and concrete aprons when required; and equipment, labor, materials, tools, and incidentals.

END OF SECTION